

Application No. 10/565,701
Attorney Docket No. 7261

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	: 10/565,701	Confirmation No.	: 2449
First Named Inventor	: Roman Teschner		
Filed	: August 31, 2007		
TC/A.U.	: 1796		
Examiner	: Peter D. Mulcahy		
Docket No.	: 7261		
Title	: Size For The Treatment Of Glass Fibers, And Glass Fibers Provided With Said Sizes		

APPEAL BRIEF

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is from the Office Action mailed October 27, 2009 rejecting claims 1-19.

I. REAL PARTY IN INTEREST

Johns Manville Europe GmbH is the real party in interest and the assignee of the present application.

II. RELATED APPEALS AND INTERFERENCES

Neither the Appellants' legal representative nor the assignee know of any other appeal or interferences which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1 and 3-19 are pending. Claim 2 is canceled. The final rejection of claims 1-19 is hereby appealed.

IV. STATUS OF AMENDMENTS

Claim 1 was amended and claim 2 was cancelled subsequent to the final rejection. The Examiner considered the amendment to claim 1 and the cancellation of claim 2 and entered both for purposes of appeal. See Advisory Action dated January 5, 2010.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to a glass fiber size.¹ It comprises water, one film-former, an adhesion promoter and an organic acid for establishing a pH in the acidic range.² The one film-former is polyvinylpyrrolidone.³

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1-19 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by, or alternatively, under 35 U.S.C. § 103(a) as allegedly unpatentable over DE 19818046 ("Schmid").

¹ See, for example, specification, page 4, line 31.

² See, for example, specification, page 4, lines 30-33.

³ See, for example, specification, page 5, lines 1-2.

VII. ARGUMENT

A. Claims 1-19 rejected under 35 U.S.C. § 102(b) as allegedly anticipated by, or alternatively, under 35 U.S.C. § 103(a) as allegedly unpatentable over Schmid

Claim 2 has been cancelled. Accordingly, the rejection of claim 2 is moot and its reversal is respectfully requested.

Schmid discloses an aqueous sizing agent for the treatment of glass fabric fibers, preferably for the production of glass rovings or yarn, containing a film forming agent that following thermal treatment has no condensable groups and at least an adhesion promoter. Also disclosed are coated glass fibers as roving or yarn that have been treated with the aqueous sizing agent and heat treated; and a composite material prepared from the coated glass fibers and polylactam prepared by anionic polymerization of lactam in the presence of the coated glass fibers. Abstract.

More specifically, Schmid describes aqueous glass fiber sizing, sized glass fibers, and laminates comprising the sized glass fibers in a polylactam matrix. The basic invention of Schmid relates to a sizing which does not negatively influence the polymerization process of lactam during the production of the fiber-reinforced laminates, and which does provide improvements of the fiber reinforced polylactam laminates, mainly good adhesion between glass and matrix, reduced glass corrosion, and improved thermal stability which leads to reduced coloring effects and increased mechanical values.

Basically, Schmid is directed towards a glass fiber sizing useful for fiber-reinforced polylactam laminates. The sizing components have been selected accordingly. Schmid teaches that the compatibility of the glass fibers in / with a polylactam matrix can be improved if the two film formers polyvinylpyrrolidone and polyamidoamide are used.

In contrast, independent claim 1 recites a glass fiber size comprising water, one film-former specifically polyvinylpyrrolidone, an adhesion promoter and an organic acid for establishing a pH in the acidic range.

The presently claimed size provides a reduction of corrosion, good cutting performance, a good wetting performance and stiffness of the filaments. Schmid does not provide any hints how to reach these goals. Neither does Schmid provide any guidance that one can achieve these goals by using polyvinylpyrrolidone alone as the film former, together with only an adhesion

promoter and an organic acid. It is quite surprising that such a simple glass fiber size can achieve such benefits. The prior art is devoid of such recognition.

The presently claimed size can be used in fiber dispersions according to the wet-laying method. The sizing is particularly suitable for erasing fibers. In contrast, Schmid relates to the improvement of compatibility of glass fibers to polylactam matrices.

Schmid fails to disclose the presently claimed glass fiber size comprising, *inter alia*, only polyvinylpyrrolidone as the film former. Rather, Schmid discloses film-formers comprising polyvinylpyrrolidone *and* polyamidoamide. See, for example, the examples on page 6 of Schmid, referred to on page 3 of the Office Action.

Neither can Schmid direct one to, and thereby render obvious, the claimed glass fiber size, because Schmid is directed specifically to a size useful in working with a polylactam matrix. The components have been specifically chosen, and two film formers are required. Removing one as suggested by the Examiner would destroy the teachings of Schmid, as well as the function of the size. This is improper when considering a reference.

Therefore, for at least the reasons discussed above, Appellants respectfully request that the anticipation and obviousness rejections of claims 1 and 3-19 over Schmid be reversed.

VIII. CLAIMS APPENDIX

See the attached Claims Appendix for a copy of the claims involved in the appeal.

IX. EVIDENCE APPENDIX

See the attached Evidence Appendix.

X. RELATED PROCEEDINGS APPENDIX

See the attached Related Proceedings Appendix for copies of decisions identified in Section II., *supra*.


XI. CONCLUSION

For the foregoing reasons, it is respectfully submitted that the rejection of Appellants' claims 1-19 is improper, and therefore, the grounds of rejection should be reversed.

The Appeal Brief is being submitted with the required fee of \$540.00.

Respectfully submitted,

JOHNS MANVILLE

A handwritten signature in black ink, appearing to read "Robert D. Touslee", written over a horizontal line.

Robert D. Touslee
Registration No. 34,032

Date: March 22, 2010

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CLAIMS APPENDIX

The Appealed Claims

1. A glass fiber size comprising water, one film-former, which is polyvinyl polyvinylpyrrolidone, an adhesion promoter and an organic acid for establishing a pH in the acidic range.
3. A size according to claim 1, characterized in that the adhesion promoter is a γ -aminopropyltriethoxysilane which has been hydrolyzed to the silanol.
4. A size according to claim 1, characterized in that the agent for setting a pH in the acidic range is acetic acid.
5. A size according to claim 1, characterized in that the composition of the size is 0.02% to 0.08% by weight of polyvinylpyrrolidone, 0.3% to 0.5% by weight of γ -aminopropyltriethoxysilane, 0.18 to 0.24% by weight of acetic acid, the balance being water and the sum total of the constituents being 100%.
6. A size according to claim 1, characterized in that the pH is 4.5 to 5.0.
7. A size according to claim 1, characterized in that the fraction of film-former and adhesion promoter in the size is between 0.3% and 0.6% by weight.
8. Glass fiber sized with a size according to claim 1.

9. Erasing glass fiber sized with a size according to claim 1.

10. A size according to claim 1, characterized in that:

- a) the film-former is polyvinylpyrrolidone;
- b) the adhesion promoter is a γ -aminopropyltriethoxysilane which has been hydrolyzed to the silanol;
- c) the agent for setting a pH in the acidic range is acetic acid.

11. A size according to claim 10, characterized in that the composition of the size is 0.02% to 0.08% by weight of polyvinylpyrrolidone, 0.3% to 0.5% by weight of γ -aminopropyltriethoxysilane, 0.18 to 0.24% by weight of acetic acid, the balance being water and the sum total of the constituents being 100%.

12. A size according to claim 10, characterized in that the pH is 4.5 to 5.0.

13. A size according to claim 10, characterized in that the fraction of film-former and adhesion promoter in the size is between 0.3% and 0.6% by weight.

14. Glass fiber sized with a size according to claim 10.

15. Erasing glass fiber sized with a size according to claim 10.

16. A size according to claim 1, comprising one adhesion promoter.
17. A size according to claim 1, comprising one organic acid for establishing a pH in the acidic range.
18. A size according to claim 1, consisting essentially of water, one film-former, one adhesion promoter and one organic acid for establishing a pH in the acidic range.
19. A size according to claim 1, consisting of water, one film-former, one adhesion promoter and one organic acid for establishing a pH in the acidic range.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.